Remarks

Applicant has amended claim 1 in the present application. Claims 2-4 remain in the application. Claim 5 has been added As such, Applicant provides the following remarks in response to the rejections relating to claims 1-4 of the 10/02/2008 office action.

Support for the changes to Claim 1 and 5 can be found in the original application at page 5, lines 1-2, 8-10 and original claim 1.

Applicant has likewise added the Abstract as requested by the Examiner.

Claims 1-4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Langeman (US 5388761) in view of Reynolds (US 4915160).

Applicant respectfully traverses this rejection and submits the following remarks to support patentability of claims 1-5.

The Examiner states that Langeman discloses a mixing apparatus having a mixing device, servo motor driven pumps, supply means for supplying materials to the pumps, mixture dispensing means, a computer to control the operation of the pumps so that a predetermined ratio of RPM between the pumps is maintained and a termperature control means.

Applicants respectfully point out that in Langeman the computers and motors are arranged to adjust the respective electrical current flow to the motors in order to maintain selected speeds (column 7, lines 43-45), but in the instant invention the elastomer base pump acts as a power assisted gear meter that meters the flow of elastomer into the mixer. Therefore, the flow rate through the base pump of the instant invention varies, unlike in Langeman, where it is constant.

Also, in Langeman an operator selects the speed of the two pumps (column 11, lines 1-6), but in the instant invention, the flow rate through the pumps changes with the flow rate of elastomer to the pump. The computers in the instant invention transmit the driven speed of the elastomer pump to adjust the speed of the additive motor to maintain a fixed rpm ratio between the two pumps. Therefore, the flow rate of the additive pump

is continually adjusted by the computer to compensate for the changing flow rate through the elastomer pump.

These differences in the instant invention allow earlier production processes, where the ingredients to produce base elastomers are added and mixed, to be directly connected to and to feed the servo motor of the invention for the elastomer without the need for separate elastomer holding tanks. The power assisted gear meters of the invention also allow the presence of low back pressure in the lines feeding the servo motors, where, in other systems of producing viscous elastomers, large back pressures are required to force the elastomer through a gear meter. Langeman does not discuss back pressure because it appears to be directed to the production or mixing of lower viscosity materials. Therefore, as discussed further below, Langeman would not be an apparatus suitable for the intended use of the instant invention of preparing compositions containing liquid elastomers and additives, because Langeman is directed toward mixing low viscosity materials, which is indicated by the fact that the compositions are sprayed.

It should also be noted that in Langeman, any modification of motor speed to compensate for changes in the properties of the components is conducted by the operator "day to day" and not as an automatic response to changes in flow or temperature as in the instant invention (column 1, lines 41-45, and column 11, lines 5-6). Furthermore, the only parameter measured by the equipment of Langeman is the motor speed (column 3, lines 30-41; column 3, lines 64-68; column 4 line 1-7; column 4, lines 30-41; column 4, lines 64-68; column 5, lines 1-7). This distinction is important, because temperature fluctuation is critical to producing consistent elastomer product from batch to batch. It's important because as the temperature of an elastomer changes, its density can change significantly. A significant change in density of the elastomer means that the volume ratio of elastomer to additive must be adjusted accordingly in production. Otherwise, the elastomer color and other properties would vary too widely from batch to batch. That Langeman does not contain any provision for temperature change is more evidence that the apparatus of Langeman is not suitable for the purpose of Claim 1.

Reynolds suffers similar deficiencies as Langeman. Specifically, in Reynolds computers and motors are arranged to either keep a constant speed or adjust the respective electrical signal to the motors in order to maintain selected speeds (column 9,

lines 5-20) In the instant invention the elastomer base pump acts as a power assisted gear meter that meters the flow of elastomer into the mixer. The computers in the instant invention transmit the driven speed of the elastomer pump to adjust the speed of the additive motor to maintain a fixed rpm ratio between the two pumps. Therefore, the flow rate of the additive pump is continually adjusted by the computer to compensate for the changing flow rate through the elastomer pump.

Reynolds suggests the use of a flow meter – but this measures the flow rate of the material being pumped out of the motor (col. 9, line 12) – again as compared to the present invention in which the pump itself meters the flow.

Since both references fail to teach the servo motor driven pumps acting as a power assisted gear meter along with a computer that transmits the driven speed to the other pump, their combination likewise fails to teach this limitation. As such, applicants contend that the invention is not obvious as suggested by the Examiner and respectfully request reconsideration of the claims.

Moreover, since claims 2-5 are dependent on Claim 1 which has now been shown to be unobvious, these claims must likewise be unobvious.

Claims 1-4 were also rejected under 35 U.S.C. 103(a) as being unpatentable over Carson (US 4493286) in view of Reynolds (US 4915160).

Applicant respectfully traverses this rejection and submits the following remarks to support patentability of claims 1-5.

The Examiner states that Carson discloses a mixing device, servo motor driven pumps, supply means for supplying materials to the pumps, mixture dispensing means, and a computer to control operation of the servo motor driven pumps.

As with Reynolds and Langeman, Carson suffers the same deficiencies. Specifically, in Carson computers and motors are arranged to keep a constant ratio of resin and hardener in previously set, desired proportions (col. 3, lines 16-18; col 4, lines 40-41). Again, in the instant invention the elastomer base pump acts as a power assisted gear meter that meters the flow of elastomer into the mixer. The computers in the instant invention transmit the driven speed of the elastomer pump to adjust the speed of the additive motor to maintain a fixed rpm ratio between the two pumps. Therefore, the flow

rate of the additive pump is continually adjusted by the computer to compensate for the changing flow rate through the elastomer pump.

Reynolds was clearly distinguished above.

Since both references fail to teach the servo motor driven pumps acting as a power assisted gear meter along with a computer that transmits the driven speed to the additive pump, their combination likewise fails to teach this limitation. As such, applicants contend that the invention is not obvious as suggested by the Examiner and respectfully request reconsideration of the claims.

Moreover, since claims 2-5 are dependent on Claim 1 which has now been shown to be unobvious, these claims must likewise be unobvious.

The present response is being submitted within the three-month shortened statutory period for response to the outstanding Office Action. Applicant authorizes the USPTO to charge deposit account 04-1520 for any fees that should be necessary to maintain the pendency of the application.

In view of the above, it is respectfully submitted that the claims are in condition for allowance. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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